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Supplementary Information

Charge Transfer Excitons in Low Band gap Polymer based Solar Cells and the Role of Processing Additives

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In Figure S1 the electroluminescence spectra of a PCPDT diode, PCPDT/PCBM devices processed with and without additive are compared. The measurement was performed with an Andor iDus InGaAs array detector attached to a Shamrock SR-303i monochromator. Due to the relatively lower detectivity compared to the Silicon CCD used in the experiments described in our article, a larger forward bias (1.6 V) a wide slit (2 mm) and relative long integration times (4 s) had to be applied. The electroluminescence of the PCPDT device is similar to the spectrum shown in Figure 4a) with a peak around 830 nm and a shoulder around 900 nm. The electroluminescence spectra of the devices with fullerenes are dominated by the emission peaking around 1100 nm. The emission of the device prepared with octane-dithiol is significantly lower compared to the device prepared without additive.

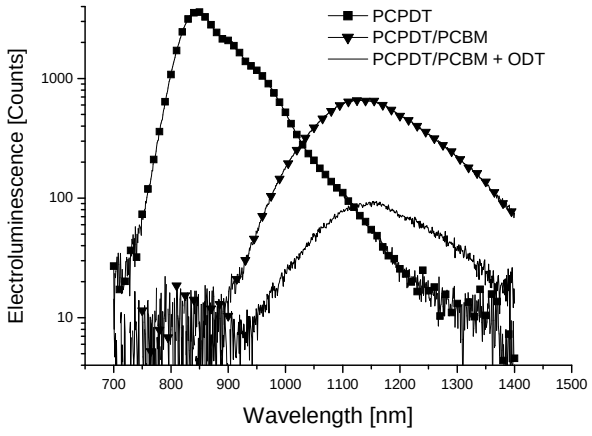

Figure S1: Electroluminescence Spectra of a PCPDT diode, PCPDT/PCBM diode and PCPDT/PCBM diode prepared with octane-dithiole. Applied bias voltage was 1.6 V. Integration time 4 seconds.